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| APPLICATION NO.                                                                 | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 09/627,448                                                                      | 07/27/2000  | Toshihiko Ouchi      | 35.G2623            | 1095             |
| 5514                                                                            | 7590        | 07/08/2002           | EXAMINER            |                  |
| FITZPATRICK CELLA HARPER & SCINTO<br>30 ROCKEFELLER PLAZA<br>NEW YORK, NY 10112 |             |                      | KIM, ELLEN E        |                  |
| ART UNIT                                                                        |             | PAPER NUMBER         |                     |                  |
|                                                                                 |             | 2874                 |                     |                  |

DATE MAILED: 07/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/627,448             | OUCHI, TOSHIHIKO    |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Ellen E. Kim           | 2874                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 28 May 2002.

2a) This action is **FINAL**.                  2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 28-52 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 28-52 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_ .
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.

4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_

**1. DETAILED ACTION**

2. This action is responsive to applicant's amendment filed on 5/28/02, which has been carefully studied by the Examiner. The arguments advanced therein, considered together with the amendments made to the claims, are persuasive and all of the rejections set forth in the previous Office action are hereby withdrawn.

**3. *Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

- a. A person shall be entitled to a patent unless –
- b. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 28, 30-34, 38, 39, and 41-48 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Swirhun et al [USPAT 5,631,988, cited in PTO-892 mailed on 2/26/02].

- c. Swirhun et al disclose an electric connecting portion [see the bottom having holes of the housing 200 in fig. 3], optical transmission means 135, an optical device 105, at least a surface optical device [VCSEL, column 6, line 59], an optical coupling portion [elements 565, 570 in fig. 5b, 5c], and a wiring pattern 117.
- d. In re claim 30, independent electrodes are shown in fig. 2b.
- e. In re claim 32, multi mirror layers are shown in fig. 5b.

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- f. In re claim 36, plurality of recessed portion are shown in fig. 3.
- g. In re claim 38, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.
- h. In re claim 39, Swirhun et al teach at column 4, lines 57-63 that a single mode fiber can be utilized.
- i. In re claim 43, Swirhun et al teach at column 8, lines 51-58 that two dimensional optoelectronic devices may be utilized.
- j. In re claim 44, through holes 119 are provided in fig. 2a.
- k. In re claims 45-48, electronic devices are shown in fig. 4a.

#### ***6. Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 29, 37, 40, and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swirhun et al.

- I. In re claim 29, Swirhun et al disclose every aspect of claimed invention except for the light receiving device is a p-i-n photodiode or a metal-semiconductor-metal photodiode. Official Notice is taken that the p-i-n

photodiode or a metal-semiconductor-metal photodiode are old and well known in the art. See In Re Malcolm 1942 C.D. 589: 543 O.G.440 MPEP 706.02(a). It would have been obvious to the one skilled in the art at the time the invention was made to modify Swirhun et al's device to include the light receiving device is a p-l-n photodiode or a metal-semiconductor-metal photodiode for the purpose of easier manufacturing process of the device.

m. Swirhun et al teach at column 4, line 64- column 5, line 3 that combining one or more optoelectric devices may be used.

n. In re claim 37, Swirhun et al disclose every aspect of claimed invention except for the window having a lens. Official Notice is taken that a window having a lens provided between optical transmission means and optoelectric conversion device are old and well known in the art. See In Re Malcolm 1942 C.D. 589: 543 O.G.440 MPEP 706.02(a). It would have been obvious to the one skilled in the art at the time the invention was made to modify Swirhun et al's device to include a window having a lens for the purpose of higher coupling efficiency.

o. In re claim 40, Swirhun et al disclose every aspect of claimed invention except for the V-grooves on a silicon substrate. Official Notice is taken that V shaped grooves in silicon substrate for holding optical fibers are old and well known in the art. See In Re Malcolm 1942 C.D. 589: 543 O.G.440 MPEP 706.02(a). It would have been obvious to the one skilled in the art at the time the invention was made to modify Swirhun et al's device to include V shaped

grooves in silicon substrate for the purpose of higher coupling efficiency of the device.

p. In re claims 49-52, Swirhun et al disclose every aspect of claimed invention except for the computer, and display. Official Notice is taken that computer is connected to the display with optoelectronic device in telecommunication technology [column 1, lines 15-19] are old and well known in the art. See In Re Malcolm 1942 C.D. 589; 543 O.G.440 MPEP 706.02(a). It would have been obvious to the one skilled in the art at the time the invention was made to modify Swirhun et al's device to be utilized in connecting between the computer and display for the purpose of smaller size and higher coupling alignment of the device [column 1, lines 52-62].

9. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swirhun et al as applied to claim 28 above, and further in view of Gilliland et al [USPAT 5,774,614].

q. Swirhun et al disclose every aspect of claimed invention except for the CMOS. Gilliland et al disclose an optoelectronic coupling including CMOS for controlling optoelectronic device [column 6, line 15]. Therefore, It would have been obvious to the one skilled in the art at the time the invention was made to modify Swirhun et al's device to include the CMOS for the purpose of inexpensive and quickly assembled coupling assemblies [column 1, lines 26-35].

r. Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

s. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. The prior art submitted by applicant has been considered and made of record (note the attached copy of form PTO-1449).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen E. Kim whose telephone number is (703)308-4946.

13. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the receptionist whose telephone number is (703)308-0956.

14. Ellen E. Kim  
15. Primary Examiner  
16. July 5, 2002/EK

A handwritten signature in black ink, appearing to read "Ellen E. Kim".